## AMENDMENT TO CLAIMS

Claims 1-3. (Cancelled)

4. (Previously presented) A method of processing pixel intensity values of a plurality of pixels in a digital image, the method comprising:

clipping those pixel intensity values outside of a variable range, the variable range for each of the pixels being a function of dynamic range of a local pixel neighborhood ; and

mapping those pixel intensity values within the variable range as follows:

$$g(I)=\begin{cases} I-A\le -W & m \\ |I-A|<W & A+\dfrac{D}{2W}(I-A) \\ I-A\ge W & M \end{cases}$$

where m represents the minimum value of the neighborhood, M represents the maximum value of the neighborhood, D represent the dynamic range, D/(2W) represents the slope, I represents pixel intensity value, g(I) represents the mapping operation, A represents the middle of a dynamic range, and 2W represents width of a contrast range, the contrast range being centered about the middle of the dynamic range, the contrast range being a function of the dynamic range.

5. (Original) The method of claim 4, wherein D/(2W) = 1 + D/R, where R corresponds to dynamic scale for sharpening, whereby

$$g(I)=I+\frac{D}{R}(I-A) \quad for \quad \{|I-A|<W\}.$$

6. (Original) The method of claim 5, wherein R has a value that is constant for all pixels in the image.

7. (Original) The method of claim 5, wherein a capturing device is used to provide the digital image; and wherein R is between one-quarter and twice a range that is normalized to cover the complete dynamic range of the capturing device.

Claims 8-12. (Cancelled)

13. (Previously presented) A method of sharpening a digital image, the digital image including a plurality of pixels of interest, for each pixel of interest the method comprising:

determining a dynamic range of a pixel neighborhood, where the dynamic range of a pixel neighborhood is based on a difference of minimum and maximum pixel values in the pixel neighborhood; and

performing contrast stretching on the pixel if the pixel lies within a contrast range, the contrast range a function of the dynamic range, the contrast stretching operation [Is] performed on each pixel of interest as follows:

$$g(I)=\begin{cases} I-A\le -W & m \\ |I-A|<W & A+\dfrac{D}{2W}(I-A) \\ I-A\ge W & M \end{cases}$$

where m represents the minimum value of the neighborhood, M represents the maximum value of the neighborhood, D represent the dynamic range, D/(2W) represents the slope, I represents pixel intensity value, g(I) represents the contrast stretching operation, A represents the middle of the dynamic range, and 2W represents width of the contrast range, the contrast range being centered about the middle of the dynamic range, the contrast range being a function of the dynamic range.

14. (Original) The method of claim 13, wherein D/(2W) = 1 + D/R, where R corresponds to dynamic scale for sharpening, whereby

$$g(I)=I+\frac{D}{R}(I-A) \quad for \quad \{|I-A|<W\}.$$

15. (Original) The method of claim 14, wherein a capturing device is used to provide the digital image; and wherein the value of R is between one-quarter and twice a range that is normalized to cover the complete dynamic range of the capturing device.

16. (Original) A method of sharpening a digital image, the digital image including a plurality of pixels of interest, for each pixel of interest the method comprising performing the following contrast stretching operation on each pixel of interest as follows:

$$g(I)=\begin{cases} I-A\le -W & m \\ |I-A|<W & A+\dfrac{D}{2W}(I-A) \\ I-A\ge W & M \end{cases}$$

where m represents the minimum value of the neighborhood, M represents the maximum value of the neighborhood, D represent the dynamic range, D/(2W) represents the slope, I represents pixel intensity value, g(I) represents the contrast stretching operation, A represents the middle of the dynamic range, and 2W represents width of the contrast range, the contrast range being centered about the middle of the dynamic range, the contrast range being a function of the dynamic range.

Claims 17-19. (Cancelled)

20. (Previously presented) Apparatus for processing pixels of interest in a digital image, the apparatus comprising a processor for determining dynamic ranges of pixel neighborhoods for the pixels of interest, and performing contrast stretching on each pixel of interest within the dynamic range of the corresponding pixel neighborhood, the contrast stretching performed on each pixel of interest as follows:

$$g(I)=\begin{cases} I-A\le -W & m \\ |I-A|<W & A+\dfrac{D}{2W}(I-A) \\ I-A\ge W & M \end{cases}$$

where m represents the minimum value of the neighborhood, M represents the maximum value of the neighborhood, D represent the dynamic range, D/(2W) represents the slope, I represents pixel intensity value, g(I) represents the contrast stretching operation, A represents the middle of the dynamic range, and 2W represents width of a contrast range, the contrast range being centered about the middle of the dynamic range, the contrast range being a function of the dynamic range.

21. (Original) The apparatus of claim 20, wherein D/(2W)= 1 + D/R, where R corresponds to dynamic scale for sharpening, whereby

$$g(I)=I+\frac{D}{R}(I-A) \quad for \quad \{|I-A|<W\}.$$

22. (Original) The apparatus of claim 21, wherein an image capture device is used to provide the digital image; and wherein the value of R is between one-quarter and twice a range that is normalized to cover the complete dynamic range of the capturing device.

Claims 23-25. (Cancelled)

26. (Previously presented) Apparatus for sharpening a digital image, the apparatus comprising a processor for determining a contrast range for pixels of interest in the digital image, clipping intensity value of each pixel of interest if the intensity value lies outside of a contrast range or mapping the pixel intensity value if the pixel intensity value lies within the contrast range; the clipping and mapping performed according to

$$g(I)=\begin{cases} I-A\le -W & m \\ |I-A|<W & A+\dfrac{D}{2W}(I-A) \\ I-A\ge W & M \end{cases}$$

where m represents the minimum value of the neighborhood, M represents the maximum value of the neighborhood, D represent a dynamic range, D/(2W) represents the slope, I represents pixel intensity value, A represents the middle of the dynamic range, and 2W represents width of the contrast range, the contrast range being centered about the middle of the dynamic range, the contrast range being a function of the dynamic range.

27. (Original) The apparatus of claim 26, wherein D/(2W) = 1 + D/R, where R corresponds to dynamic scale for sharpening, whereby

$$g(I)=I+\frac{D}{R}(I-A) \quad for \quad \{|I-A|<W\}.$$

28. (Original) The apparatus of claim 27, wherein an image capture device is used to provide the digital image; and wherein R is between one-quarter and twice a range that is normalized to cover the complete dynamic range of the capturing device.

Claims 29-31. (Cancelled)

32. (Previously presented) An article for a processor, the article comprising memory and an image sharpening program stored in the memory, the program, when executed, causing the processor to process pixels of interest, each pixel of interest being processed by clipping its intensity value if its intensity value lies outside of a variable contrast range, and mapping its intensity value if its intensity value lies within the variable contrast range, wherein the clipping or mapping includes performing the following on each pixel of interest:

$$g(I)=\begin{cases} I-A\le -W & m \\ |I-A|<W & A+\dfrac{D}{2W}(I-A) \\ I-A\ge W & M \end{cases}$$

where m represents the minimum value of a local neighborhood of pixel intensity values, M represents the maximum value of the neighborhood, D represents a dynamic range, D/(2W) represents the slope, I represents pixel intensity value, A represents the middle of the dynamic range, and 2W represents width of a contrast range, the contrast range being centered about the middle of the dynamic range, the contrast range being a function of the dynamic range.

33. (Previously presented) The article of claim 32, wherein D/(2W) = 1 + D/R, where R corresponds to dynamic scale for sharpening, whereby

$$g(I)=I+\frac{D}{R}(I-A) \quad for \quad \{|I-A|<W\}.$$

34. (Previously presented) The article of claim 33, wherein R has a value that is constant for all pixels in the image.

Claims 35-36. (Cancelled)